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ABSTRACT

From a sample of 6,000 pupils in a Tennessee school district, this study relates the variables of gender, social class, and number of parents in student households to achievement on a norm-referenced test. Charts presenting data findings comprise three-fourths of the document. Investigation was motivated by studies that connect student learning difficulties to poverty and by research claims that students from all social classes can master minimum competencies. Researchers disaggregated California Achievement Test (CAT) data over a 3-year period on the basis of social class from pupils in grades 4, 6, and 8. Third- year data were additionally disaggregated by gender and by number of parents. Results show that upper social class pupils performed better than lower social class pupils, though that difference narrowed during the three-year period. On the CAT, better scores were produced by females, two-parent children, and upper social class children. Two-parent lower social class pupils performed better than did their counterparts from one-parent households. Conclusions are as follows: (1) identifiable social class subgroups of students are not performing well; (2) this study should be replicated; (3) because poverty affects educational outcomes, schools require assistance; and (4) curriculum revisions are needed. (CJH)

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JACKSON MUNICIPAL SEPARATE SCHOOL DISTRICT

Jackson, Mississippi

Dr. Robert N. Fortenberry, Superintendent

# PUPIL ACHIEVEMENT AS RELATED TO SOCIAL CLASS, GENDER, AND NUMBER OF PARENTS IN THE HOUSEHOLD

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## INTRODUCTION-BACKGROUND

The history of public education can be traced through many changes since the founding of America. James Robinson outlines American education in three eras. ERA ONE is described where little learning was expected from many pupils. Pupils who would, learned; others were considered laggards. In ERA TWO much learning was expected from some pupils. Good learners learned much; poor learners learned little. In ERA THREE much learning is expected from all pupils. All pupils can learn, given sufficient time and assistance. (11)

We may argue for some other philosophical description of education but there is little argument today that the primary objective of our schools is to provide the best education for all pupils. Grant and Sleeter write"...the common aim has been to understand how education can be constructed and distributed so it does not discriminate against major social groups." (7) The school effectiveness movement originally directed attention to social class with the belief that all pupils could master essential objectives whether they were from upper, middle, or lower social classes. This concern is now extended to other attributes such as race, gender, number of parents in the household, etc.

Grant and Sleeter's review of research applauds the attention directed toward race, social class, and gender during the last two decades but they reveal that most of the studies deal with these attributes as separate issues rather than an integrated issue. "We therefore argue that more attention needs to be paid to the integration of race, class, and gender." (7) They proceed to illustrate how studies that integrate these variables can help our understanding of education.

This study will report pupil achievement in the Jackson Public Schools over a three-year period and will consider the independent and composite effects of gender, social class, and number of parents in the household on pupil achievement. Data analysis will be made with a special model for evaluating school effectiveness.

## PURPOSE-SIGNIFICANCE

The purpose of this paper can be best understood with an explanation of two related pieces of information. (A) Various demographic studies indicate a drastic change in the household structure in America over the last several years. There are more working mothers with pre-school and school age children, more never-married mothers, and more one-parent families than ever before. Accompanying this situation is a large number of pupils who live in economic poverty. Because of poor diet, poor medical care, and poor psychological support, many of these pupils will come to school with learning disabilities or serious learning difficulties. (8) (B) The proponents of school effectiveness claim that we can adequately teach pupils what we want them to know without regard to social class. (3) No claim is made that pupils from all social strata will perform equally well on all dimensions of learning continuim. The claim is that minimum competencies can be mastered by pupils from all social classes. Wilbur Brookover is quoted by Jim Brewer as saying, "...schools cannot overcome all of the inequalities in society but that schools can most surely keep from contributing to those inequalities." (1)

This study provides a descriptive analysis of gender, social class, number of parents in the pupil's household and relates these variables to pupil achievement on a norm-referenced test. A general model for evaluating school effectiveness will be used but the analysis will be extended beyond social class to include gender, and the number of parents in the pupil's household. Special attention will be given to the interaction of variables.

Description of the population alone provides important information for curriculum design. Since we cannot control the circumstances from which our pupils come, we must be able to control the construction and delivery of education with adequate attention to all groups.

## PROCEDURE

Population.--The population for this study is approximately 6,000 pupils in grades 4, 6, and 8 in the Jackson Public Schools. The district is composed of about 30,000 pupils in 37 elementary schools, 10 junior high schools, and 7 senior high schools.

Criterion Measure--California Achievement Test.--California achievement test data are disaggregated over a three-year period on the basis of social class only. The CAT data from the third year are also disaggregated by gender and number of parents in the pupil's household. Results are provided in graphic form.

Definitions.--The following definitions will help understanding of the rest of this paper. The abbreviations indicated are used where brevity is appropriate.

1. California Achievement Test (CAT). The 1977 edition was used with the appropriate level for each grade.

2. Minimum Mastery of Essential Objectives. This criterion is actually best measured with criterion tests, but until we have that capability, minimum mastery is measured by achievement above the 30th percentile score on the CAT battery total.

3. Social Class (SES: U=Upper and L=Lower). Social class is defined by a method advocated by Ron Edmonds which assigns free and reduced meals recipient to lower SES and paying pupils to Middle/Upper SES. (The disadvantages of this method are fully recognized but it is used as the best practical alternative.)

4. Gender (M or F).

5. Number of Parents in the Household (1 or 2). Pupils living with both natural parents, one natural parent and a step-parent, one natural parent and an adoptive parent, and with two legally adoptive parents are considered from two-parent homes. Those with one parent and those who have been placed with a family by court order are considered from one parent households.

## FINDINGS

Pupil Achievement History.--Charts I-II illustrate pupil performance on the CAT over a three-year period for grades 4, 6, and 8. Significant results from these data are as follows: (1) The general performance of upper SES pupils is better than that of lower SES pupils, but that difference has narrowed during the three year period. There has been a decrease in the percentage of low-achieving pupils from both lower and upper SES groups. (2) The emphasis on mastery of essentials for lower SES pupils has not been accompanied by a decrease in the percentage of higher achieving pupils, rather, the percentage of higher achieving pupils has INCREASED in both social classes.

Population Description by SES, Gender, Number of Parents.--Table I and charts IV-VI delineate the population of the study into unique groups.

1. The percentages of pupils in each group is essentially the same across grades. One exception is noted in the percentage of pupils by SES in grade 8. No specific explanation is offered but speculation is that the majority of dropouts between grade 6 and grade 8 are lower SES rather than upper SES.

2. The percentage of one-parent and two-parent households differed significantly from original estimates, however the percentages do approximate national data.

3. It is important to note that the biggest groups of pupils from one-parent families are also from lower SES families.

4. The smallest count of pupils are from one-parent, upper SES families.

Composite Disaggregation of CAT Scores.--Table I and charts VII-IX provide disaggregation of test scores for each of the eight unique groups described above. The sequence of groups on the charts have been arranged to give the best linear fit of scores from the poorest on the left to the best on the right. This process was arbitrary. There may be cause to argue with this arrangement. Charts X-XV provide additional information by number of parents and by sex.

1. Generally, females score better than males, two parent children score better than one-parent children, and upper SES children score better than lower SES children.

2. Apparently achievement is not affected by parental status for upper class pupils, but two-parent household lower SES pupils do perform better than one-parent household lower SES pupils. Speculation is that this relationship is really an economic relationship rather than a family one. Single females who make up most of the single parent families are in the lowest income level of all adult groups.

## DISCUSSION

1. This study illustrates progress by the district in delivering educational services to pupils from both upper and lower SES backgrounds. But within SES groups some identifiable subgroups of students are not performing as well as others.

2. This study needs replication and comparison with other studies although it seems that not many such studies exist. (See Reference 10)

3. The analysis presented here is limited by the specific evaluation model. Additional study is needed that will provide specific hypotheses, rigorous controls, and more thorough statistical analysis.

4. It is especially critical that additional studies involve the same pupils over a number of years rather than the practice of taking a "snapshot" for a series of years in the same grade or grades.

5. The scope and consequences of poverty on educational outcomes is tremendous! Educational institutions need help from political and economic arenas to mitigate the effects of poverty on pupil learning.

6. In addition to curriculum revisions, it seems of greatest importance to design, evaluate, and implement intervention and remedial programs for pupils who will need additional time and motivation to succeed.

NUMBER AND PERCENT OF PUPILS
BY SES, GENDER, AND NUMBER OF PARENTS IN HOUSEHOLD

JACKSON PUBLIC SCHOOLS
1984-85



| GROUP OR SUB-GROUP | GRADE 4 | | GRADE 6 | | GRADE 8 | |
|---|---|---|---|---|---|---|
| | N | PCT | N | PCT | N | PCT |
| GRAND TOTAL | 2053 | --- | 2138 | --- | 1968 | --- |
| U-UPPER SES | 665 | 32.39 | 738 | 34.52 | 825 | 41.92 |
| L-LOWER SES | 1388 | 67.61 | 1400 | 65.48 | 1143 | 58.08 |
| M-MALE | 1004 | 48.90 | 1055 | 49.35 | 943 | 47.92 |
| F-FEMALE | 1049 | 51.10 | 1083 | 50.65 | 1025 | 52.08 |
| 1-ONE PARENT | 998 | 48.61 | 1031 | 48.22 | 933 | 47.41 |
| 2-TWO PARENT | 1055 | 51.39 | 1107 | 51.78 | 1035 | 52.59 |
| LM1 | 419 | 20.41 | 426 | 19.93 | 350 | 17.78 |
| LM2 | 256 | 12.47 | 251 | 11.74 | 210 | 10.67 |
| LF1 | 470 | 22.89 | 464 | 21.70 | 376 | 19.11 |
| LF2 | 243 | 11.84 | 259 | 12.11 | 207 | 10.52 |
| UM1 | 58 | 2.83 | 74 | 3.46 | 96 | 4.88 |
| UM2 | 271 | 13.20 | 304 | 14.22 | 287 | 14.58 |
| UF1 | 51 | 2.48 | 67 | 3.14 | 111 | 5.64 |
| UF2 | 285 | 13.88 | 293 | 13.70 | 331 | 16.82 |
| UF1+UM1 | 109 | 5.31 | 141 | 6.59 | 207 | 10.52 |
| LF1+LM1 | 889 | 43.30 | 890 | 41.63 | 726 | 36.89 |
| LM2+LF2+UM2+UF2 | 1055 | 51.39 | 1107 | 51.78 | 1035 | 52.59 |

DISTRIBUTION OF CAT SCORES
FOR GRADES FOUR, SIX AND EIGHT
1984-1985
DISAGGREGATED BY SES, GENDER, AND NUMBER OF PARENTS

U,L = UPPER, LOWER SES  M,F = MALE, FEMALE
1,2 = ONE- OR TWO-PARENT HOUSEHOLD

| GROUP | GRADE | | RANGE OF PERCENTILE SCORES 1-30 | 31-70 | 71-100 | TOTAL |
|---|---|---|---|---|---|---|
| LF1 | 4 | N= | 65 | 270 | 135 | 470 |
| | | %= | 13.83 | 57.45 | 28.72 | |
| LF2 | 4 | N= | 15 | 116 | 112 | 243 |
| | | %= | 6.17 | 47.74 | 46.09 | |
| LM1 | 4 | N= | 100 | 224 | 95 | 419 |
| | | %= | 23.87 | 53.46 | 22.67 | |
| LM2 | 4 | N= | 46 | 126 | 84 | 256 |
| | | %= | 17.97 | 49.22 | 32.81 | |
| UF1 | 4 | N= | 5 | 13 | 33 | 51 |
| | | %= | 9.80 | 25.49 | 64.71 | |
| UF2 | 4 | N= | 10 | 100 | 175 | 285 |
| | | %= | 3.51 | 35.09 | 61.40 | |
| UM1 | 4 | N= | 4 | 23 | 31 | 58 |
| | | %= | 6.90 | 39.66 | 53.45 | |
| UM2 | 4 | N= | 22 | 110 | 139 | 271 |
| | | %= | 8.12 | 40.59 | 51.29 | |

(CONTINUED OVER)

DISTRIBUTION OF CAT SCORES
FOR GRADES FOUR, SIX AND EIGHT
1984-1985
DISAGGREGATED BY SES, GENDER, AND NUMBER OF PARENTS



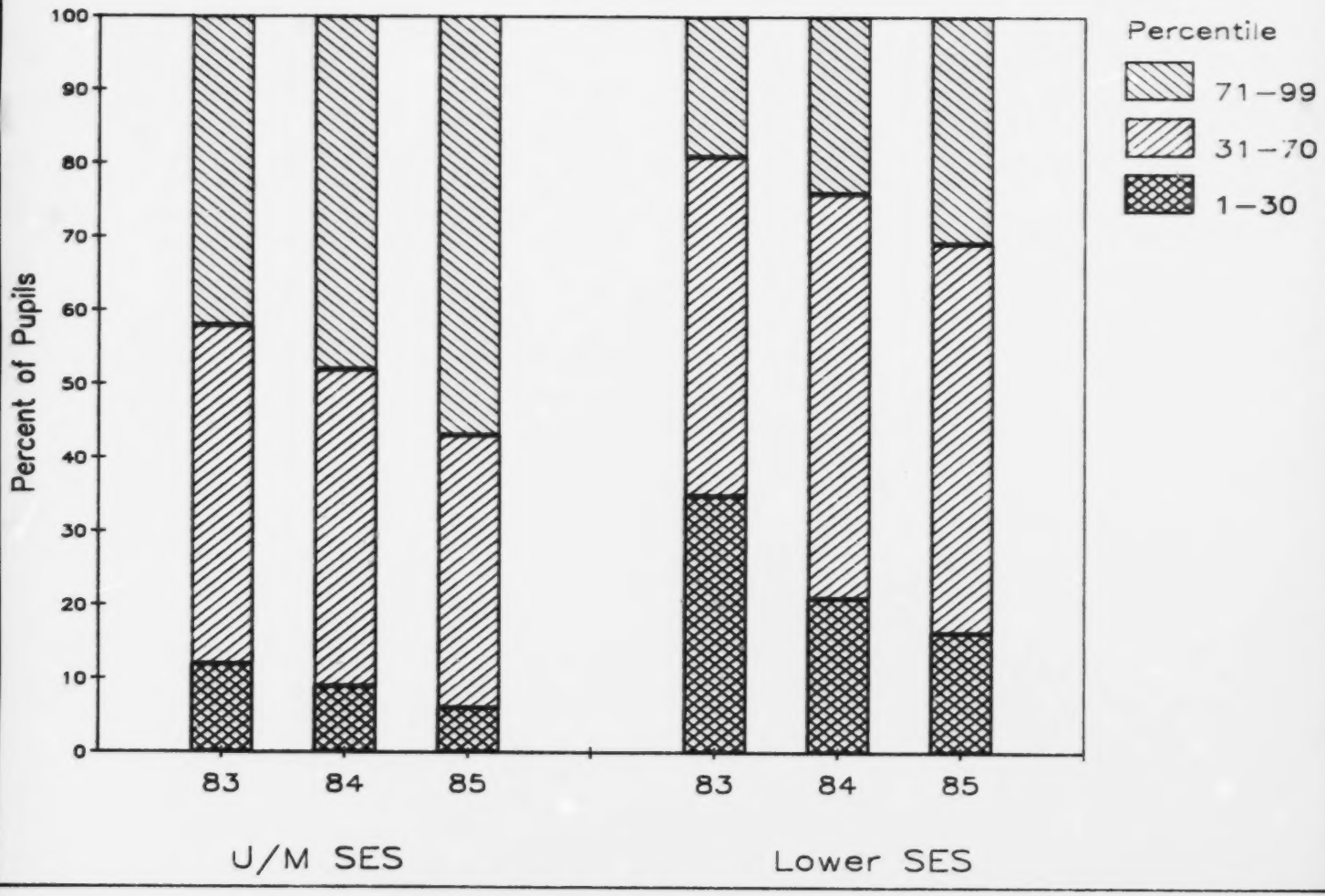
U,L = UPPER, LOWER SES  M,F = MALE, FEMALE
1,2 = ONE- OR TWO-PARENT HOUSEHOLD

| GROUP | GRADE | | RANGE OF PERCENTILE SCORES 1-30 | 31-70 | 71-100 | TOTAL |
|---|---|---|---|---|---|---|
| LF1 | 6 | N= | 53 | 243 | 168 | 464 |
| | | %= | 11.42 | 52.37 | 36.21 | |
| LF2 | 6 | N= | 22 | 124 | 113 | 259 |
| | | %= | 8.49 | 47.88 | 43.63 | |
| LM1 | 6 | N= | 88 | 226 | 112 | 426 |
| | | %= | 20.66 | 53.05 | 26.29 | |
| LM2 | 6 | N= | 51 | 126 | 74 | 251 |
| | | %= | 20.32 | 50.20 | 29.48 | |
| UF1 | 6 | N= | 3 | 19 | 45 | 67 |
| | | %= | 4.48 | 28.36 | 67.16 | |
| UF2 | 6 | N= | 6 | 97 | 190 | 293 |
| | | %= | 2.05 | 33.11 | 64.85 | |
| UM1 | 6 | N= | 9 | 31 | 34 | 74 |
| | | %= | 12.16 | 41.89 | 45.95 | |
| UM2 | 6 | N= | 22 | 107 | 175 | 304 |
| | | %= | 7.24 | 35.20 | 57.57 | |
| LF1 | 8 | N= | 90 | 225 | 61 | 376 |
| | | %= | 23.94 | 59.84 | 16.22 | |
| LF2 | 8 | N= | 38 | 127 | 42 | 207 |
| | | %= | 18.36 | 61.35 | 20.29 | |
| LM1 | 8 | N= | 118 | 196 | 36 | 350 |
| | | %= | 33.71 | 56.00 | 10.29 | |
| LM2 | 8 | N= | 59 | 26 | 25 | 210 |
| | | %= | 28.10 | 60.00 | 11.90 | |
| UF1 | 8 | N= | 9 | 60 | 42 | 111 |
| | | %= | 8.11 | 54.05 | 37.84 | |
| UF2 | 8 | N= | 20 | 146 | 165 | 331 |
| | | %= | 6.04 | 44.11 | 49.85 | |
| UM1 | 8 | N= | 12 | 54 | 30 | 96 |
| | | %= | 12.50 | 56.25 | 31.25 | |
| UM2 | 8 | N= | 26 | 146 | 115 | 287 |
| | | %= | 9.06 | 50.87 | 40.07 | |

# GRADE FOUR CAT RESULTS

*DISAGGREGATED BY SES*

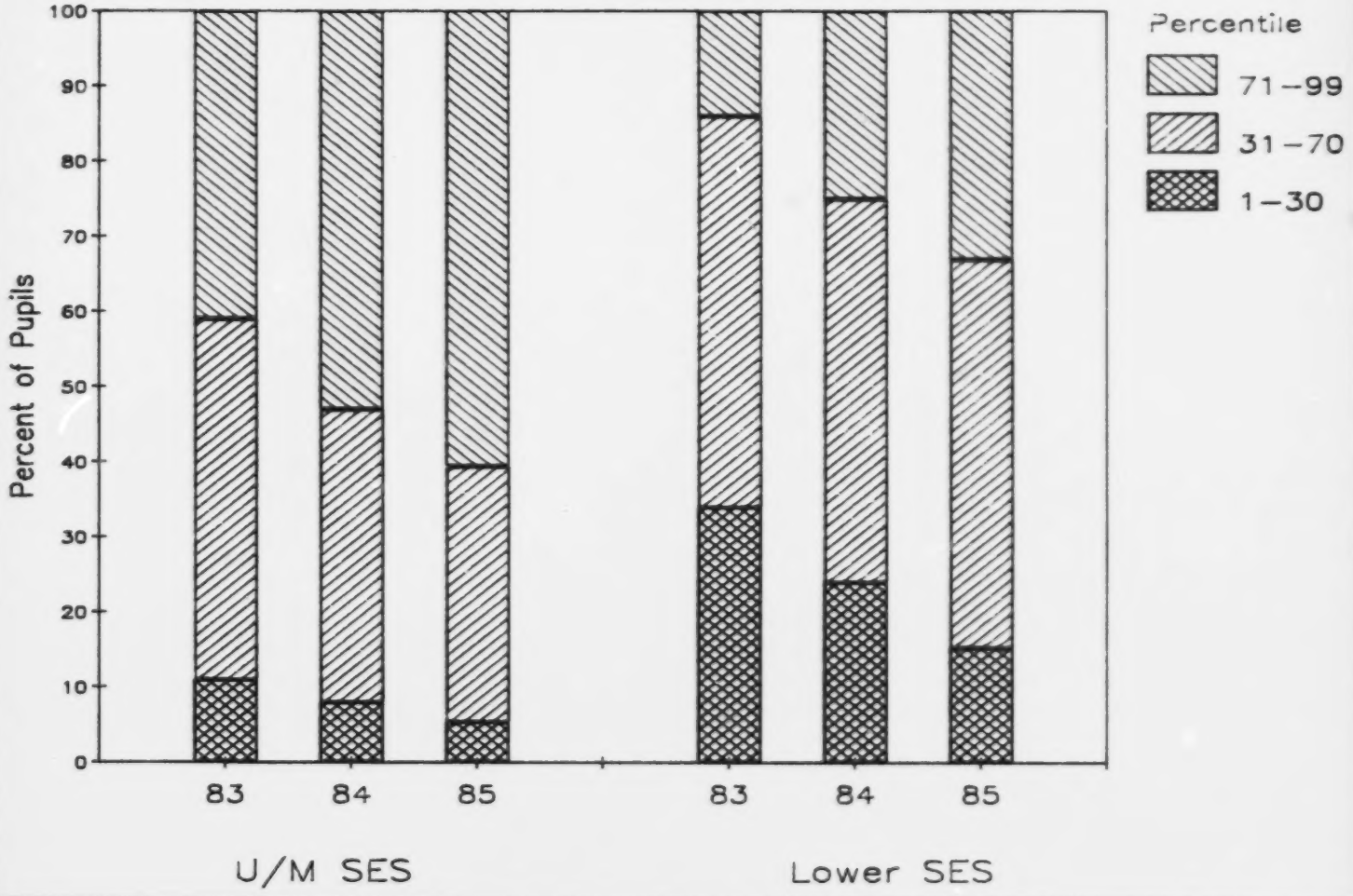
**1983–1985**



# GRADE SIX CAT RESULTS

*DISAGGREGATED BY SES*

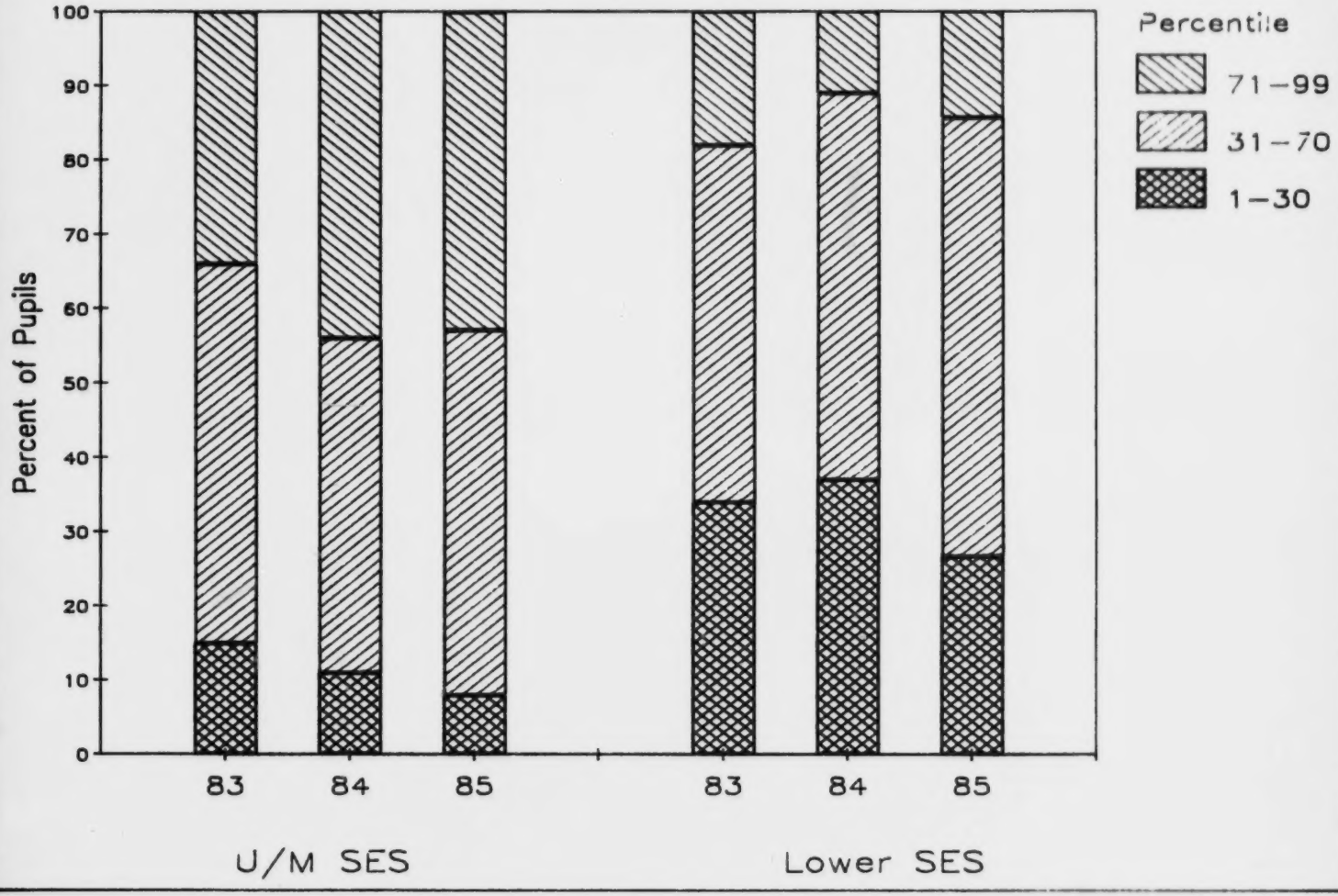
**1983–1985**



# GRADE EIGHT CAT RESULTS

## *DISAGGREGATED BY SES*

**1983–1985**



## GRADE FOUR PUPILS

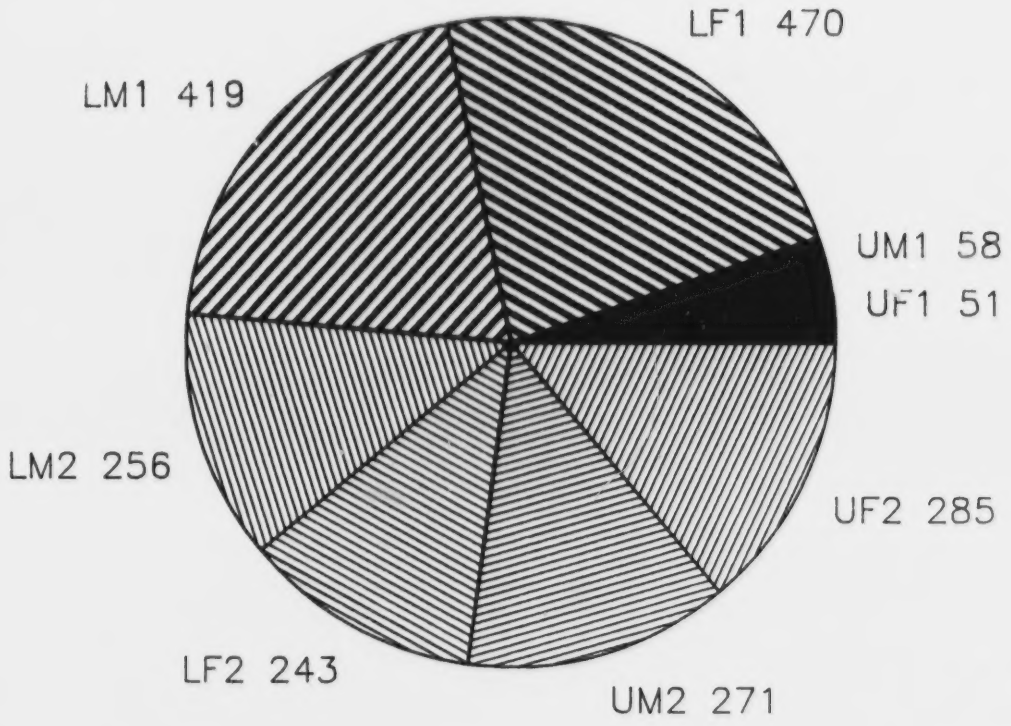
By Special Grouping

*TOTAL N = 2053*

UF1+UM1 = **5.31%**

LF1+LM1 = **43.30%**

LM2+LF2+UM2+UF2 = **51.39%**




U,L = Upper,Lower SES M,F = Male,Female 1,2 = Number of Parents in Home

## GRADE SIX PUPILS

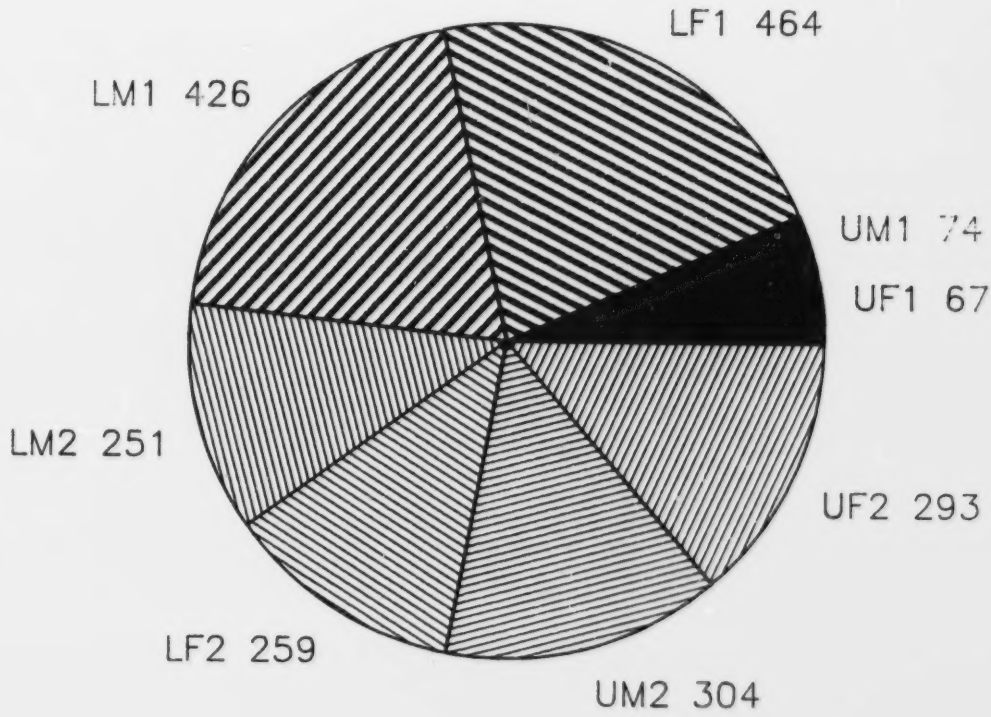
By Special Grouping

*TOTAL N = 2138*

UF1+UM1 = **6.59%**

LF1+LM1 = **41.63%**

LM2+LF2+UM2+UF2 = **51.78%**




U,L = Upper,Lower SES M,F = Male,Female 1,2 = Number of Parents in Home

## GRADE EIGHT PUPILS

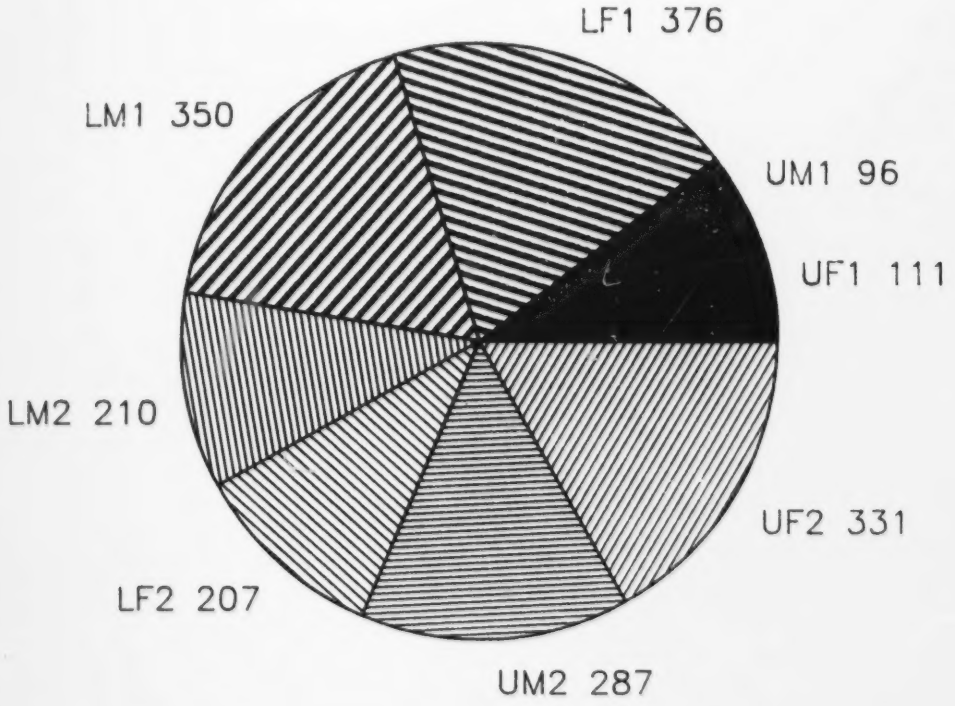
By Special Grouping

*TOTAL N = 1968*

UF1+UM1 = **10.52%**

LF1+LM1 = **36.89%**

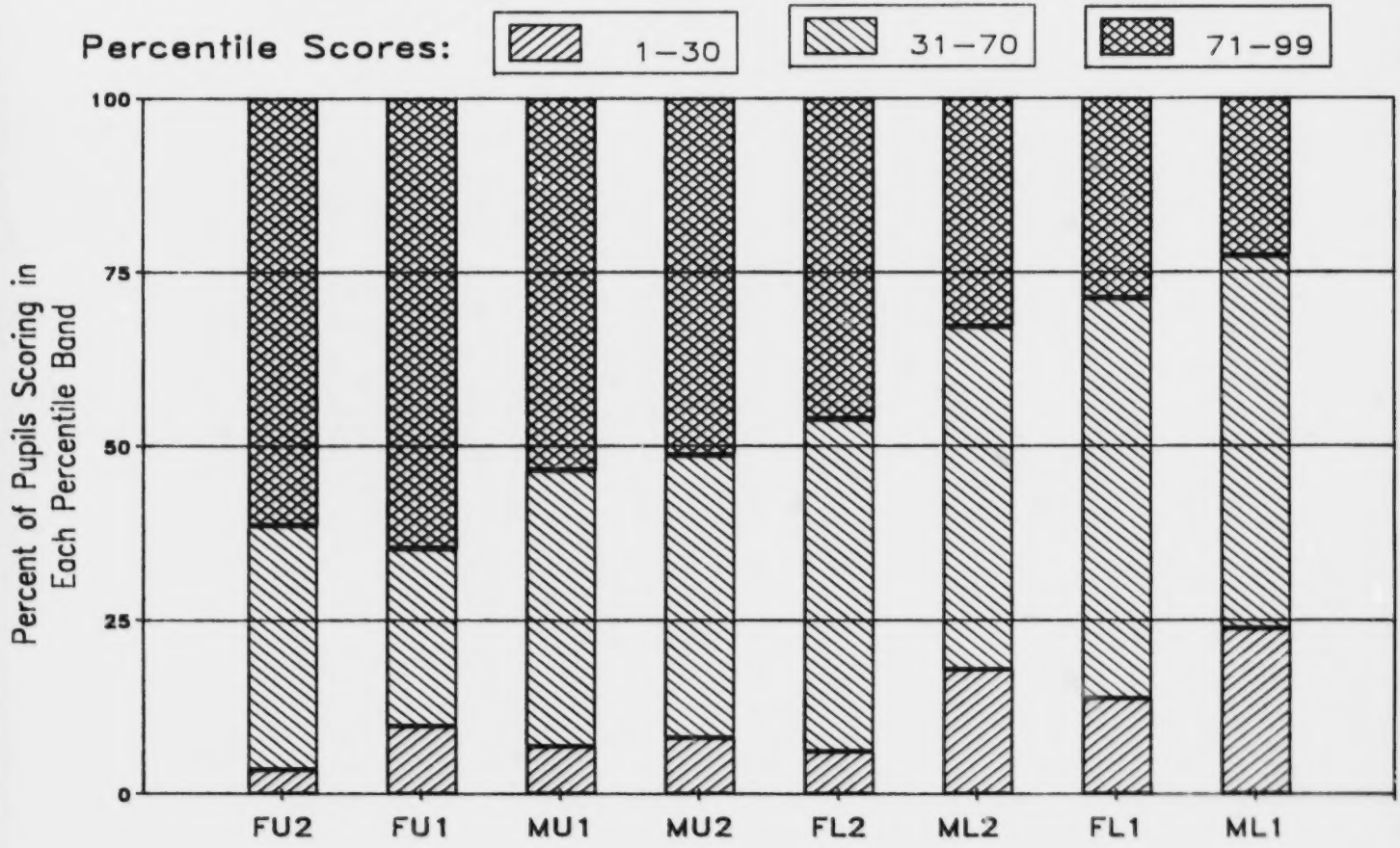
LM2+LF2+UM2+UF2 = **52.59%**




U,L = Upper,Lower SES M,F = Male,Female 1,2 = Number of Parents in Home

# GRADE FOUR CAT SCORES -- 1984-85

*DISAGGREGATED BY SES, SEX, AND NUMBER OF PARENTS**

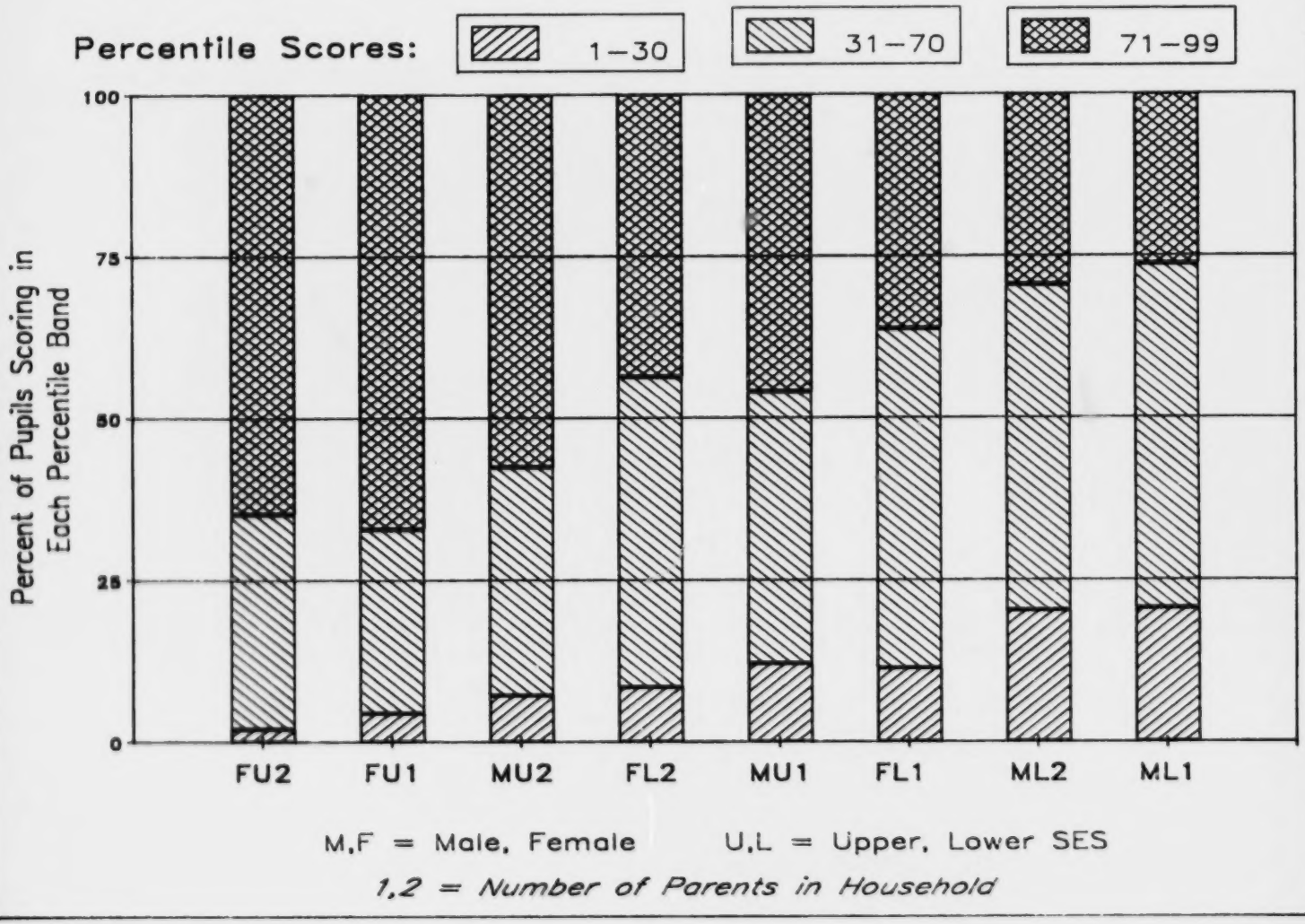



*M,F = Male, Female* *U,L = Upper, Lower SES*

*1,2 = Number of Parents in Household*

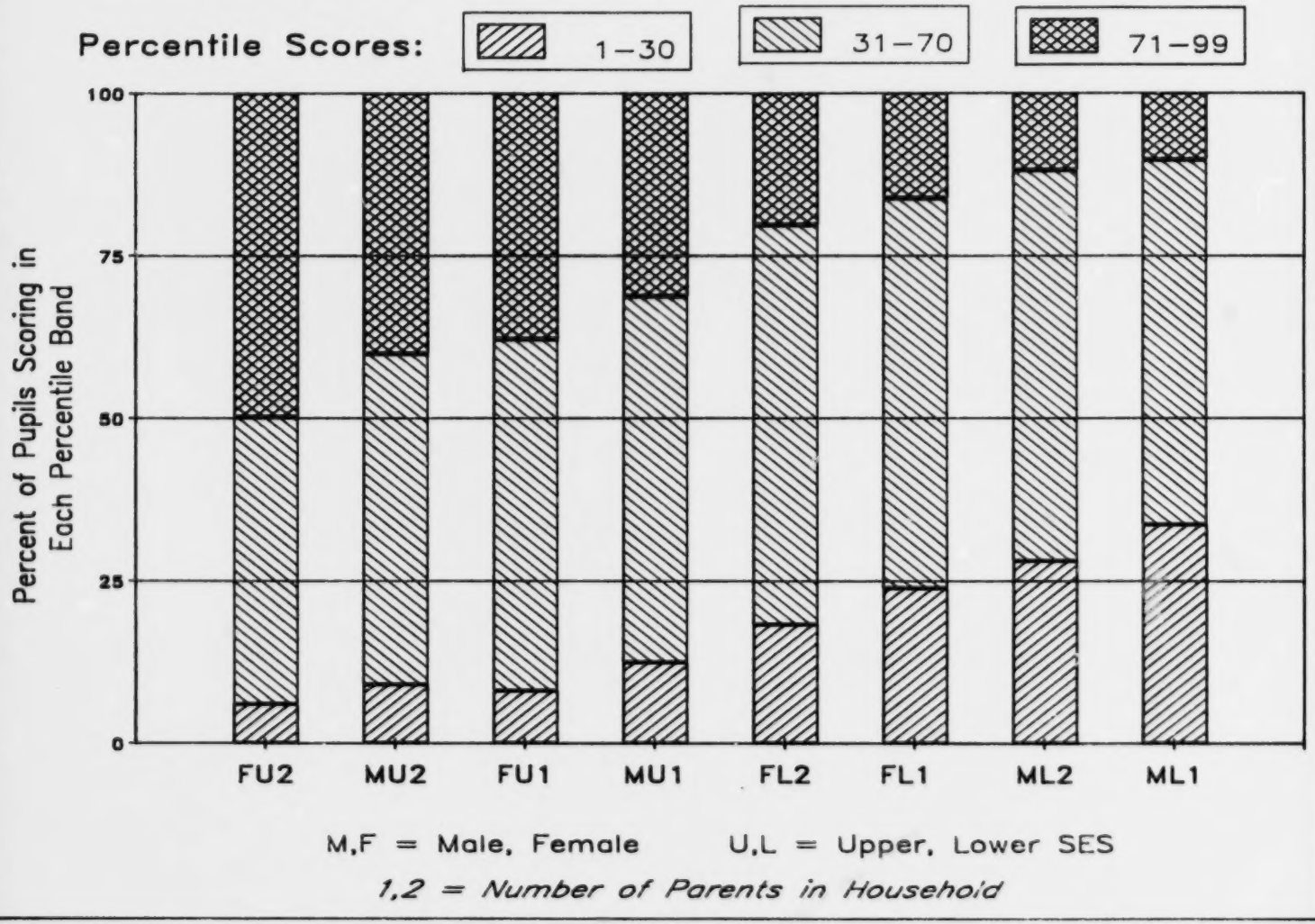
# GRADE SIX CAT SCORES -- 1984-85

*DISAGGREGATED BY SES, SEX, AND NUMBER OF PARENTS**



# GRADE EIGHT CAT SCORES -- 1984-85

*DISAGGREGATED BY SES, SEX, AND NUMBER OF PARENTS**

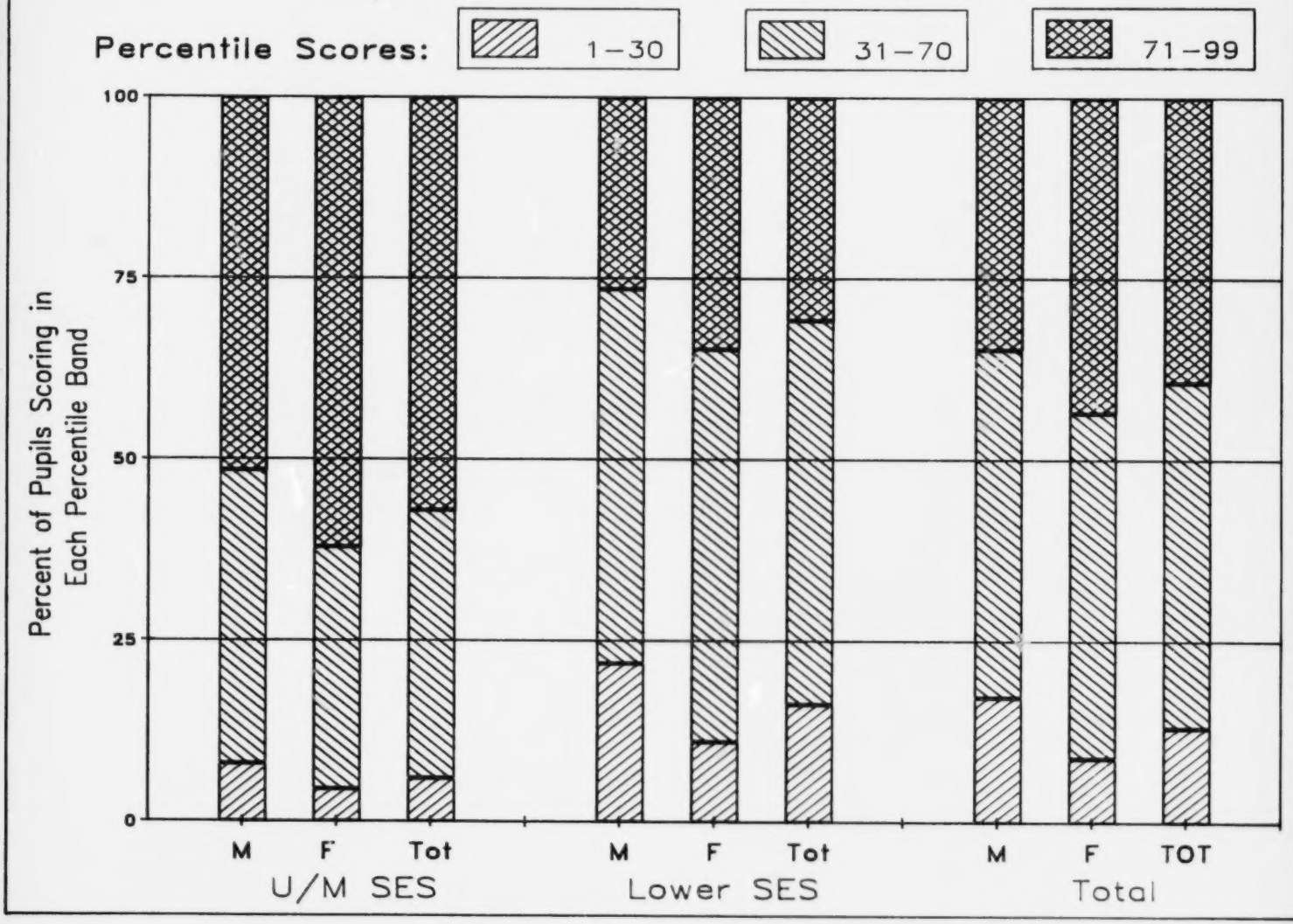


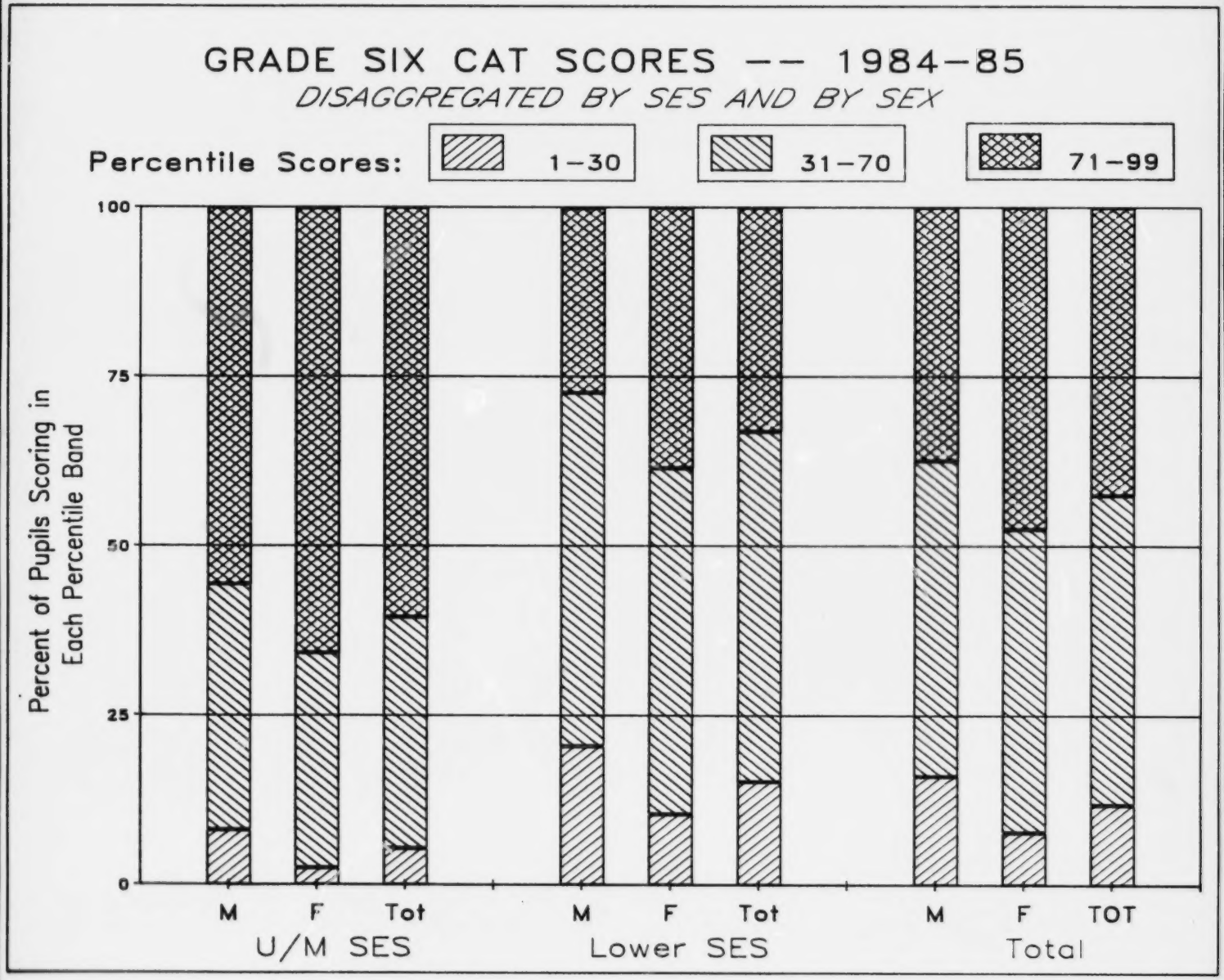

M,F = Male, Female U,L = Upper, Lower SES

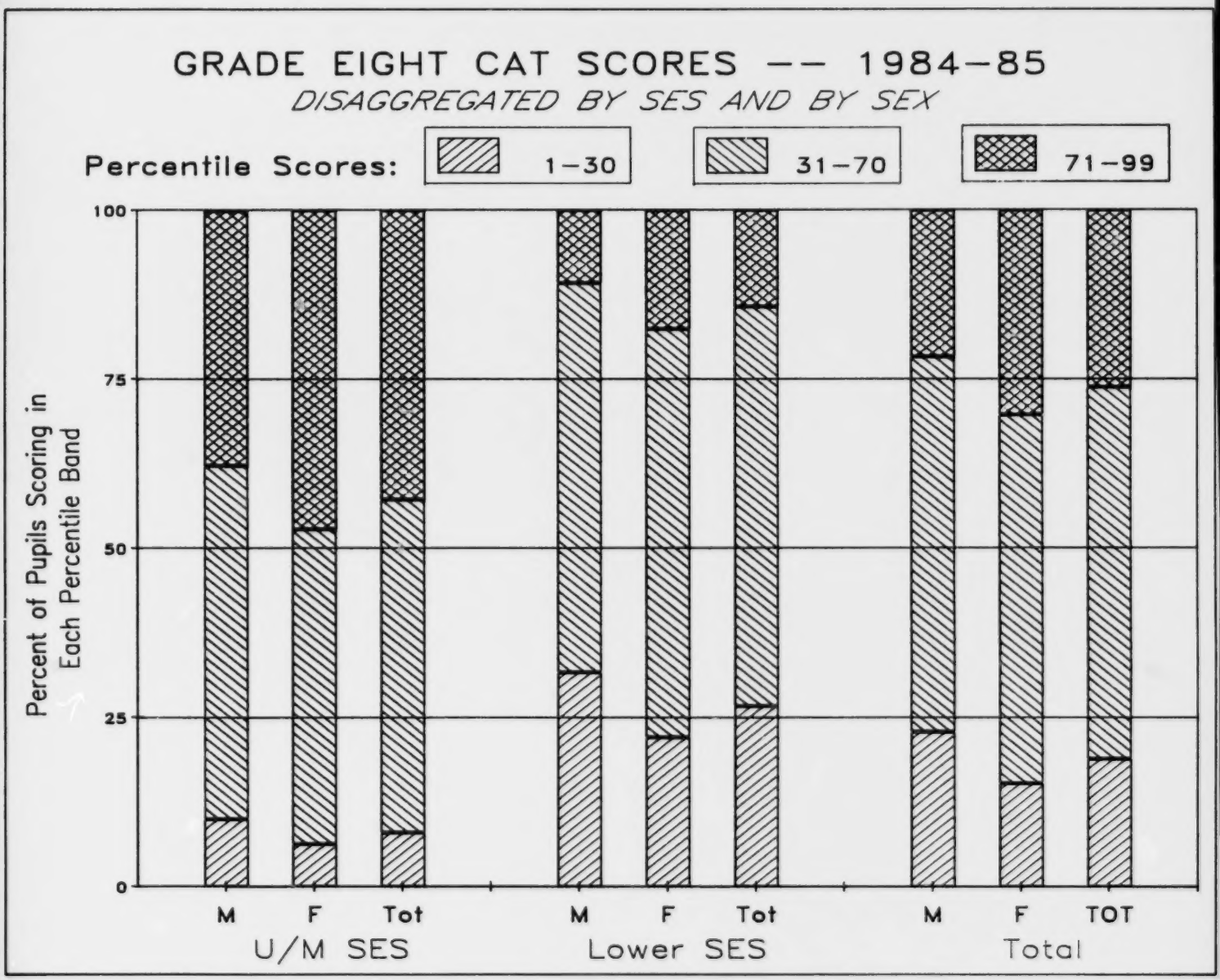
*1,2 = Number of Parents in Household*

# GRADE FOUR CAT SCORES -- 1984-85

*DISAGGREGATED BY SES AND BY SEX*

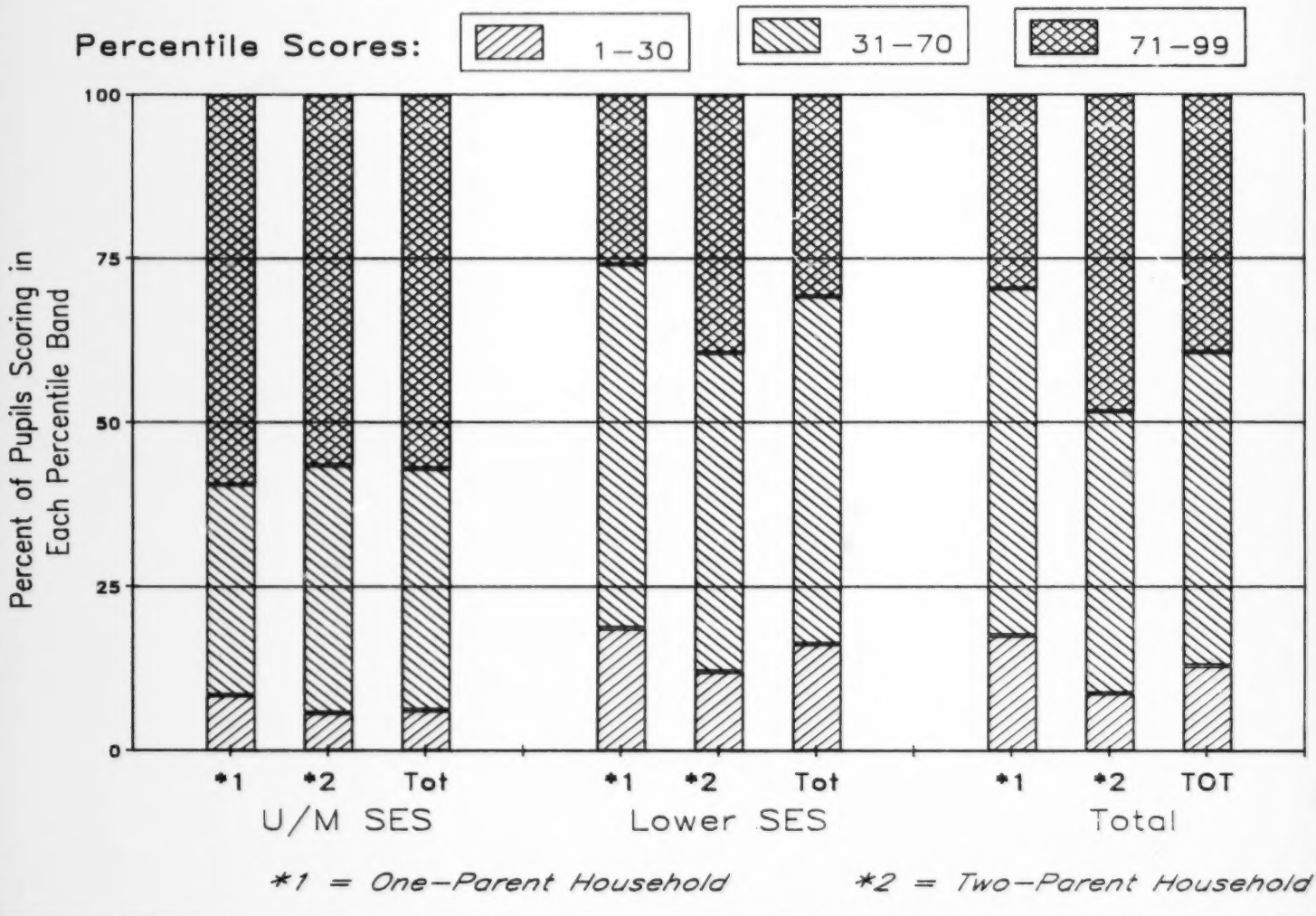



GRADE SIX CAT SCORES -- 1984-85
DISAGGREGATED BY SES AND BY SEX
Percentile Scores:
1-30
31-70
71-99
Percent of Pupils Scoring in Each Percentile Band
100
75
50
25
0
M
F
Tot
M
F
Tot
M
F
TOT
U/M SES
Lower SES
Total


GRADE EIGHT CAT SCORES -- 1984-85
DISAGGREGATED BY SES AND BY SEX
Percentile Scores:
1-30
31-70
71-99
Percent of Pupils Scoring in Each Percentile Band
100
75
50
25
0
M
F
Tot
M
F
Tot
M
F
TOT
U/M SES
Lower SES
Total

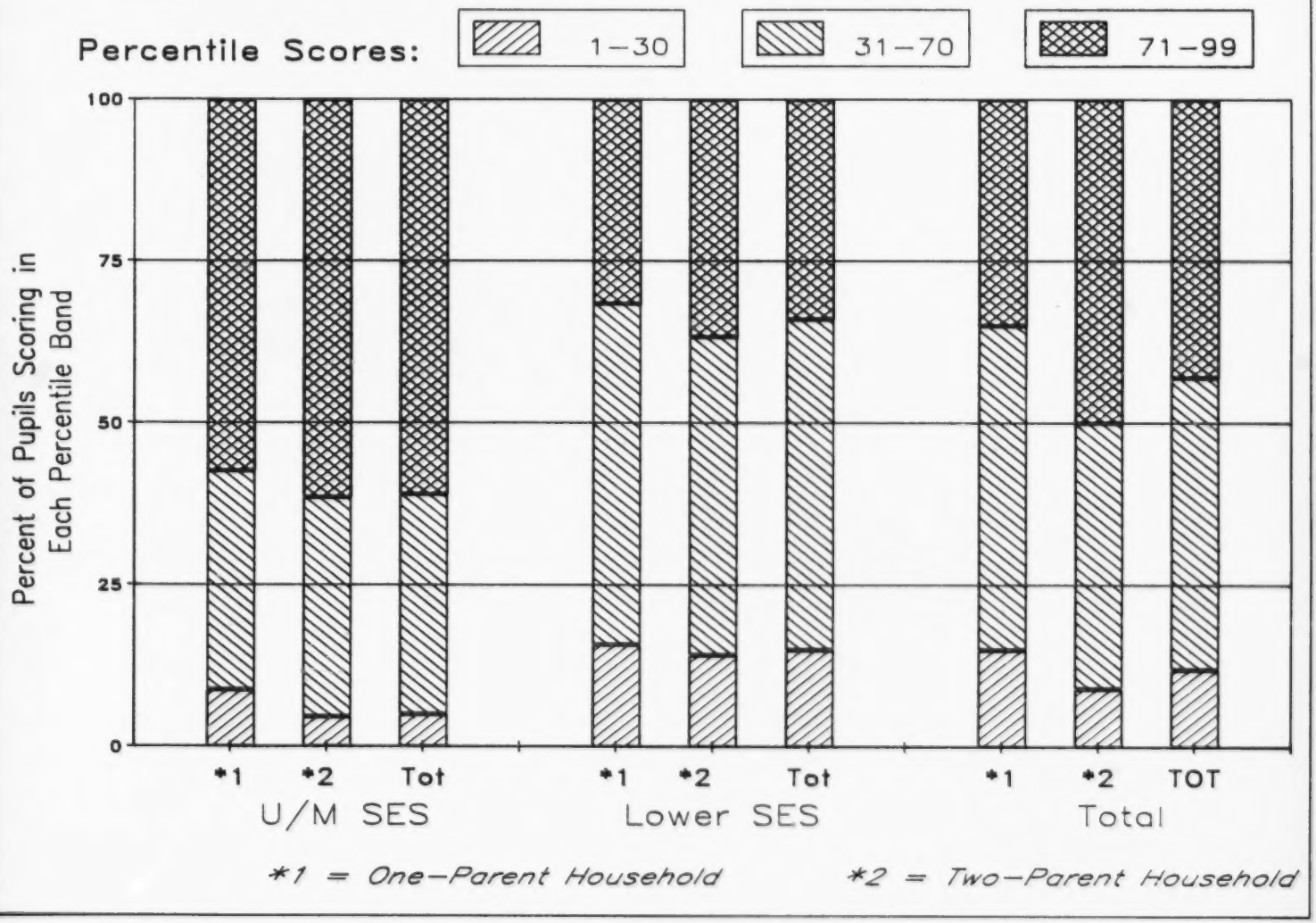
# GRADE FOUR CAT SCORES -- 1984-85

*DISAGGREGATED BY SES AND BY NUMBER OF PARENTS**



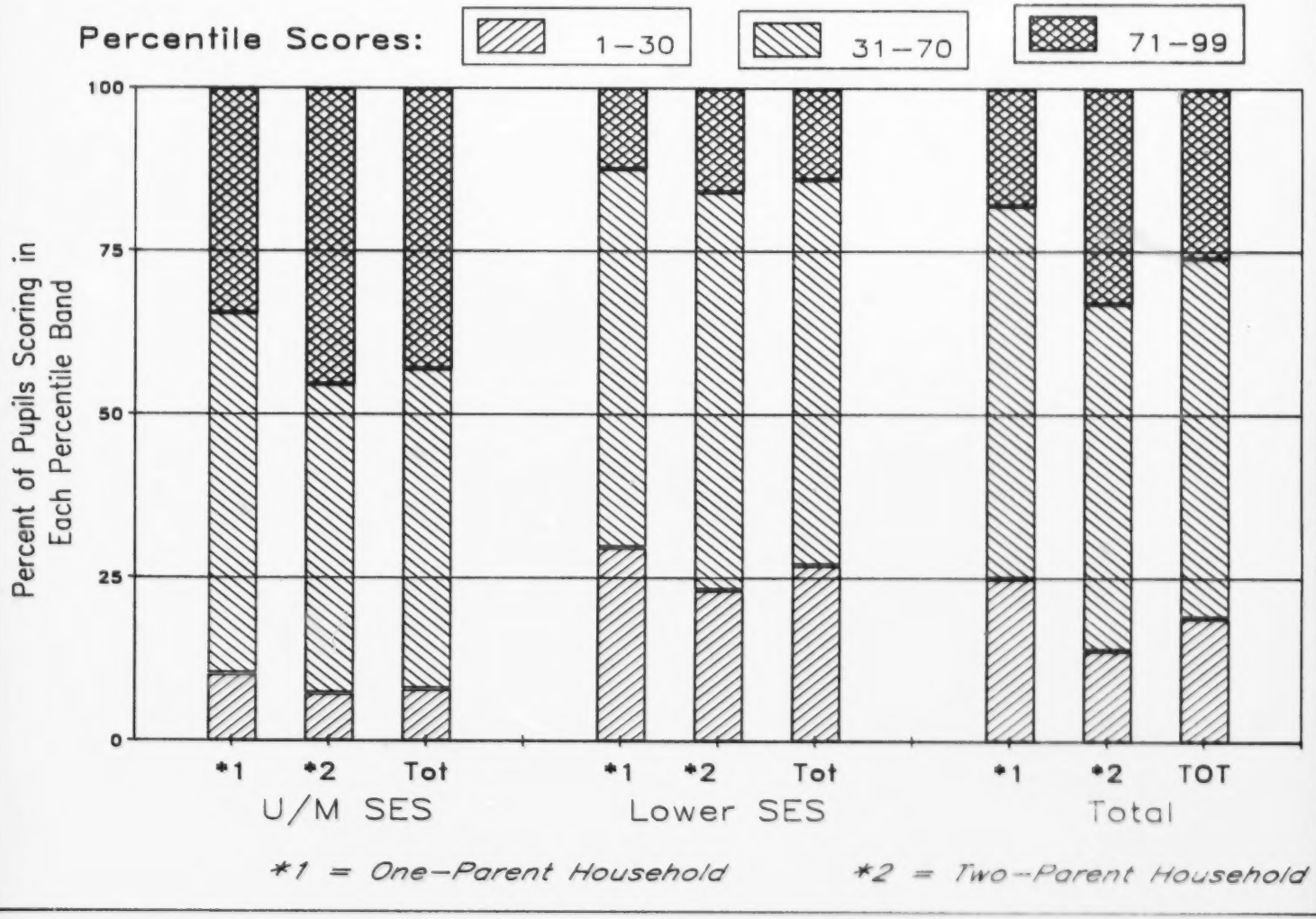
# GRADE SIX CAT SCORES -- 1984-85

*DISAGGREGATED BY SES AND BY NUMBER OF PARENTS**



# GRADE EIGHT CAT SCORES -- 1984-85

*DISAGGREGATED BY SES AND BY NUMBER OF PARENTS**




**1 = One-Parent Household* **2 = Two-Parent Household*

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